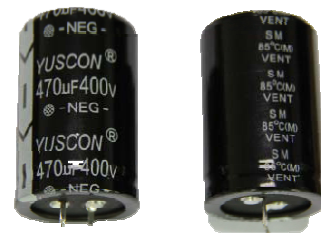


SM Series

- SM Series large size capacitors have "self-standing" terminals and can be directly soldered to printed circuit boards without any fixing clamps or adhesive agents. They are easily fixed to printed circuit boards due to the specially designed terminals.

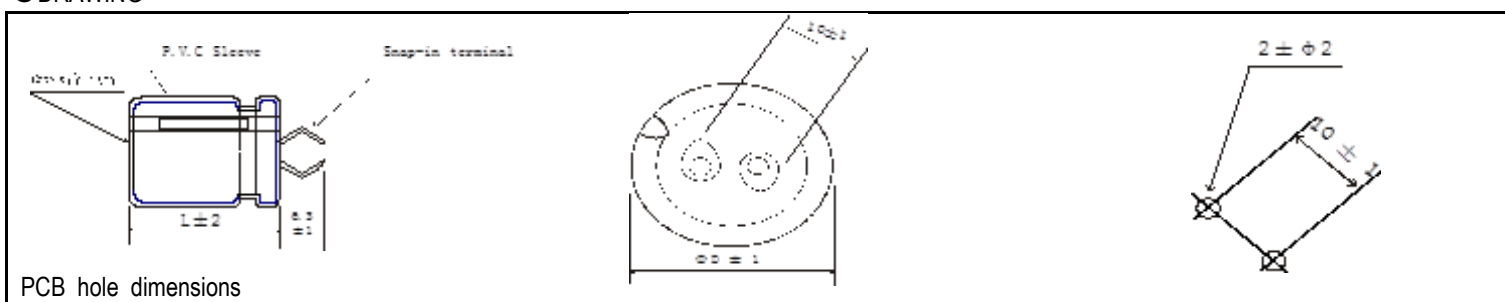
- Rohs compliance.



SPECIFICATIONS

Series	SM	SL																					
Category Temperature Range	16V ~ 100V : -40 ~+85℃	16V ~ 100V : -40 ~+105℃																					
	160V ~ 450V : -25 ~+85℃	160V ~ 450V : -25 ~+105℃																					
Nominal Cap. Range	82 ~ 33,000μF	47 ~ 22,000 μ F																					
Capacitance Tolerance	-20% ~ + 20 % (-10 ~ + 30 %)	20% ~ + 20 % (20 ℃ , 120Hz)																					
Leakage Current	I = 0.02 CV or 3(μ A) whichever is smaller , after 5min																						
Dissipation Factor(tan δ)	16 V ~ 100V : Dissipation factor at 20℃ , 120Hz shall not exceed the values given in the table of Standard Ratings 160V ~ 450V : ≤ 0.15																						
Low Temp. Impedance Stability at 120Hz	<table><tr><td>W. V .</td><td>10 , 16</td><td>25</td><td>35</td><td>50 , 63</td><td>80, 100</td><td>160 ~ 450</td></tr><tr><td>Z(- 25℃) / Z (+ 20℃)</td><td>4</td><td>3</td><td>3</td><td>2</td><td>2</td><td>4</td></tr><tr><td>Z(- 40℃) / Z (+ 20℃)</td><td>15</td><td>10</td><td>8</td><td>6</td><td>5</td><td>—</td></tr></table>		W. V .	10 , 16	25	35	50 , 63	80, 100	160 ~ 450	Z(- 25℃) / Z (+ 20℃)	4	3	3	2	2	4	Z(- 40℃) / Z (+ 20℃)	15	10	8	6	5	—
W. V .	10 , 16	25	35	50 , 63	80, 100	160 ~ 450																	
Z(- 25℃) / Z (+ 20℃)	4	3	3	2	2	4																	
Z(- 40℃) / Z (+ 20℃)	15	10	8	6	5	—																	
High Temp. Load Test	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated working voltage applied for 2,000 hours at 85℃ (EGH, at 105℃) Capacitance Change ... ≤ ±15% of the initial value Dissipation Factor ... ≤ 200% of the initial specified value Leakage Current ... ≤ the initial specified value																						
High Temp. Non-Load Test	The following specifications shall be satisfied when then capacitors are restored to 20℃ after exposing them at the rated 85℃(EGH, at 105℃) for 1,000 hours without voltage applied to the capacitors for a minimum of 30 minutes, at least 24 hours but not more than 48 hours before the measurements. Capacitance Change ... ≤ ±20% of the initial value Dissipation factor ... ≤ 150% of the initial specified value Leakage Current ... ≤ the initial specified value																						

DRAWING



PCB hole dimensions

Freq.(Hz)	(60) 50	120	500	1k	10k
Cap.(µ F)					
82~470	0.70	1.0	1.10	1.15	1.20
560~1000	0.75	1.0	1.20	1.25	1.35
1200~4700	0.80	1.0	1.25	1.35	1.40
6800 up	0.85	1.0	1.30	1.4	1.45

PART NUMBERING SYSTEM

SM

□ □ □

□

□ □ □

□

□ □

Series

Rated Cap.

Cap. Tolerance

Rated Voltage

Case Size D

Case Size L

SM series

TUS series Case Size Table

Parameter	16				25				35				50				63				80				100			
	20				32				44				63				79				100				125			
	22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35
Cap (μF)																												
1000	Case Size L (mm) →																				25				30	20		
	Dissipation Factor →																				0.2				0.2	0.2		
	Ripple Current (Arms) 120Hz at 85°C →																				0.88				0.94	0.93		
1500																	25				30	25			35	(30)	25	
																	0.25				0.20	0.20			0.20	0.20		
																	1.08				1.15	1.13			1.22	1.22		
2200													25				30	25			40	(30)	25		50	(40)	(30)	25
													0.30				0.25	0.25			0.20	0.20			0.2			0.2
													1.13				1.2	1.19			1.34	1.28			1.47			1.35
3300									25				30	25			35	(30)	25		50	(40)	(30)	25		50	(40)	30
									0.35				0.30	0.30			0.25	0.25			0.25	0.25			0.25			0.2
									1.38				1.47	1.46			1.56	1.56			1.80				1.65			1.75
4700					25				30	25			35	(30)	25		45	(35)	(30)	25		50	(40)	30		50	40	
					0.40				0.35	0.35			0.30	0.30			0.25			0.25		0.25	0.25			0.25	0.25	
					1.48				1.57	1.56			1.67	1.67			1.84			1.77		2.01	1.87			2.12	2.05	
6800	25				30	25			35	(30)	25		50	40	30	25		50	(35)	30					50	40		
	0.50				0.40	0.40			0.35	0.35			0.30	0.30			0.25	0.25			0.25	0.25			0.25	0.25		
	1.78				1.89	1.87			2.01	2.01			2.31	2.13			2.42	2.25			2.25				2.56	2.47		
10000	30	25			35	(30)	25		45	(35)	(30)	25		50	(35)	30		45	40									
	0.50	0.50			0.40				0.35			0.35		0.35	0.35			0.35	0.35									
	1.94	1.92			2.06				2.27			2.18		2.48	2.3			2.52	2.53									
15000	40	(35)	25		45	(35)	(30)	25		50	(35)	30		50	40													
	0.50		0.50		0.40				0.40			0.35		0.35	0.35													
	2.65		3.52		2.78				2.67			3.03		2.82	3.21	3.1												
22000		45	(30)	25		45	(35)	30				45	40															
		0.50		0.50		0.40			0.40			0.35	0.35															
		3.52		3.23		3.52			3.41			3.73	3.76															
33000			45	35				50	40																			
			0.50	0.50				0.40	0.40																			
			4.28	4.12				4.45	4.31																			

Case size L in parentheses is not standard. On ordering, please ask us detailed specifications

SM series Case Size Table

Parameter Cap (μF)	160					180					200					250					350					400					450														
	200					225					250					300					400					450					500														
	22	25	30	35	40	22	25	30	35	40	22	25	30	35	40	22	25	30	35	40	22	25	30	35	40	22	25	30	35	40	22	25	30	35	40										
82	Case Size L (mm) →																														25					30					25				
	Ripple Current (Arms) 120Hz at 85°C →																														0.83					0.89					0.88				
100																					25					30	25						35	(30)	25										
120																					0.76					0.97	0.96						1.03	1.02	1.03										
150																					30	25				30	25						40	(30)	25										
180																					0.89	0.88				1.07	1.06						1.19	1.13	1.13										
220																					30	25				35	(30)	25					45	(35)	30										
270																					0.99	0.98				1.26	1.26	1.26					1.39	1.32	1.34										
330																					35	(30)	25			40	(35)	25					50	(40)	(30)	25									
390																					1.15					1.46	1.45	1.38					2.26	1.52	1.46	1.46									
470																					40	(35)	(25)			50	(40)	(30)	25				45	(35)	30										
560																					1.36					1.76	1.69	1.62	1.62					1.76	1.7	1.72									
680																					25					30	25						40	36											
820																					1.5					1.96	1.9	1.9					1.99	2.02											
1000																					35	30				45	(35)	30					45	36											
1200																					1.87	1.86				1.8		1.75					2.29	2.2											
1500																					35	30				50	(40)	30					45	36											
1800																					2.04	2.03	2.04			2.02		1.9				2.5	2.42		2.51										
																					40	(35)	(25)	25			40	36						45											
																					2.35	2.35	2.23	2.38			2.19	2.22				2.76		2.88											
																					50	(40)	(30)	25			50	(40)					45												
																					2.81	2.7	2.59	2.59			2.59					3.13													
																					45	(35)	30			45																			
																					3.11	3.01	3.01			2.88																			
																					40	(30)	25			50	(40)	30																	
																					3.26	3.13	3.13			3.55	3.46	3.31																	
																					50	(35)	30			45	36																		
																					3.92	3.65	3.66			4	3.88																		
																					40	36				50	40																		
																					4.19	4.25				4.55	4.4																		
																					40	36				45	36																		
																					4.08	3.96				4.08	3.96																		
																					40	36				45	36																		
																				</																									